

## SEQUENCE LISTING

<110> TOLEDANO, MICHEL  
BITEAU, BENOIT

<120> APPLICATIONS OF A NEW CLASS OF ENZYMES: SULFIREDOXINS

<130> 1169-042

<140> 10/563,375

<141> 2006-01-04

<150> PCT/FR04/01727

<151> 2004-07-02

<150> FR 03/08212

<151> 2003-07-04

<160> 17

<170> PatentIn Ver. 3.3

<210> 1

<211> 127

<212> PRT

<213> *Saccharomyces cerevisiae*

<400> 1

Met	Ser	Leu	Gln	Ser	Asn	Ser	Val	Lys	Pro	Thr	Glu	Ile	Pro	Leu	Ser
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Glu	Ile	Arg	Arg	Pro	Leu	Ala	Pro	Val	Leu	Asp	Pro	Gln	Lys	Ile	Asp
			20					25					30		
Ala	Met	Val	Ala	Thr	Met	Lys	Gly	Ile	Pro	Thr	Ala	Ser	Lys	Thr	Cys
		35					40					45			
Ser	Leu	Glu	Gln	Ala	Glu	Ala	Ala	Ala	Ser	Ala	Gly	Glu	Leu	Pro	Pro
		50				55					60				
Val	Asp	Val	Leu	Gly	Val	Arg	Val	Lys	Gly	Gln	Thr	Leu	Tyr	Tyr	Ala
	65				70					75					80
Phe	Gly	Gly	Cys	His	Arg	Leu	Gln	Ala	Tyr	Asp	Arg	Arg	Ala	Arg	Glu
				85					90					95	
Thr	Gln	Asn	Ala	Ala	Phe	Pro	Val	Arg	Cys	Arg	Val	Leu	Pro	Ala	Thr
			100					105					110		
Pro	Arg	Gln	Ile	Arg	Met	Tyr	Leu	Gly	Ser	Ser	Leu	Asp	Ile	Glu	
		115					120					125			

<210> 2

<211> 120

<212> PRT

<213> *Candida albicans*

&lt;400&gt; 2

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Met Ser Met Tyr Thr Ser Arg Leu Ala Thr Glu Tyr Val Pro Leu Ser
 1              5              10              15

Glu Ile Lys Arg Pro Ile Pro Pro Val Leu Asp Tyr Gln Lys Ile Asp
      20              25              30

Ala Met Leu Ser Thr Leu Lys Gly Val Pro Met Glu Ser Ala Thr Cys
      35              40              45

Lys Val Glu Asp Ile Thr Ala Gly Glu Leu Pro Pro Ile Asp Val Phe
      50              55              60

Lys Ile Arg Glu Asn Gly Lys Asn Phe Tyr Phe Ala Phe Gly Gly Cys
      65              70              75              80

His Arg Phe Gln Ala Tyr Asp Arg Ile Ser Lys Glu Thr Glu Lys Glu
      85              90              95

Val Met Val Lys Ser Arg Ile Leu Pro Ala Thr Arg Lys Ser Leu Arg
      100              105              110

Ile Tyr Leu Gly Ala Ser Val Asp
      115              120

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&lt;210&gt; 3

&lt;211&gt; 124

&lt;212&gt; PRT

&lt;213&gt; Schizosaccharomyces pombe

&lt;400&gt; 3

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Met Thr Ser Ile His Thr Gly Ser Asn Asn Asn Ile Val Glu Leu Asp
 1              5              10              15

Met Ser Glu Leu Ile Arg Pro Ile Pro Pro Val Leu Asp Met Asn Lys
      20              25              30

Val Asn Ser Met Met Glu Thr Met Thr Gly Lys Thr Pro Pro Ala Ser
      35              40              45

Cys Gly Leu Thr Ser Glu Asp Leu Glu Ala Gly Glu Leu Pro Pro Val
      50              55              60

Asp Val Leu Thr Phe Lys Lys Ser Gly Lys Pro Tyr Tyr Phe Ala Phe
      65              70              75              80

Gly Gly Cys His Arg Leu Arg Ala His Asp Glu Ala Gly Arg Lys Lys
      85              90              95

Val Arg Cys Lys Leu Val Asn Cys Ser Pro Asn Thr Leu Arg Leu Tyr
      100              105              110

Leu Gly Ala Ser Ala Asn Lys Phe Leu Asp Ser Asp
      115              120

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<210> 4  
 <211> 137  
 <212> PRT  
 <213> Homo sapiens

<400> 4  
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 Gly Ala Pro Glu Gly Pro Gly Pro Ser Gly Gly Ala Gln Gly Gly Ser  
                     20                    25                    30  
 Ile His Ser Gly Arg Ile Ala Ala Val His Asn Val Pro Leu Ser Val  
                     35                    40                    45  
 Leu Ile Arg Pro Leu Pro Ser Val Leu Asp Pro Ala Lys Val Gln Ser  
                     50                    55                    60  
 Leu Val Asp Thr Ile Arg Glu Asp Pro Asp Ser Val Pro Pro Ile Asp  
                     65                    70                    75                    80  
 Val Leu Trp Ile Lys Gly Ala Gln Gly Gly Asp Tyr Phe Tyr Ser Phe  
                     85                    90                    95  
 Gly Gly Cys His Arg Tyr Ala Ala Tyr Gln Gln Leu Gln Arg Glu Thr  
                     100                    105                    110  
 Ile Pro Ala Lys Leu Val Gln Ser Thr Leu Ser Asp Leu Arg Val Tyr  
                     115                    120                    125  
 Leu Gly Ala Ser Thr Pro Asp Leu Gln  
                     130                    135

<210> 5  
 <211> 136  
 <212> PRT  
 <213> Mus musculus

<400> 5  
 Met Gly Leu Arg Ala Gly Gly Ala Leu Arg Arg Ala Gly Ala Gly Pro  
     1                    5                    10                    15  
 Gly Ala Pro Val Val His Gly Pro Gly Gly Ala Gln Gly Gly Ser Ile  
                     20                    25                    30  
 His Ser Gly Cys Ile Ala Thr Val His Asn Val Pro Ile Ala Val Leu  
                     35                    40                    45  
 Ile Arg Pro Leu Pro Ser Val Leu Asp Pro Ala Lys Val Gln Ser Leu  
                     50                    55                    60  
 Val Asp Thr Ile Leu Ala Asp Pro Asp Ser Val Pro Pro Ile Asp Val  
                     65                    70                    75                    80  
 Leu Trp Ile Lys Gly Ala Gln Gly Gly Asp Tyr Tyr Tyr Ser Phe Gly  
                     85                    90                    95

Gly Cys His Arg Tyr Ala Ala Tyr Gln Gln Leu Gln Arg Glu Thr Ile  
                   100                  105                  110

Pro Ala Lys Leu Val Arg Ser Thr Leu Ser Asp Leu Arg Met Tyr Leu  
           115                  120                  125

Gly Ala Ser Thr Pro Asp Leu Gln  
       130                  135

<210> 6

<211> 162

<212> PRT

<213> *Drosophila melanogaster*

<400> 6

Met Glu Phe Ile Ser His Phe Leu Arg Ala Thr Ser Arg Arg Thr Ala  
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Ala Leu Gly Pro Ile Leu Gln Arg Asn Arg Ser Glu Ile Ile Gln Lys  
                   20                  25                  30

Gln Ser Leu Thr Asn Arg Gln Ala Phe Arg Arg Tyr Arg Ser Ser Cys  
           35                  40                  45

Ser Thr Met Asp Thr Thr Val His Ser Ala Gly Ile Asp Glu Thr His  
       50                  55                  60

Leu Val Pro Met Ser Val Ile Gln Arg Pro Ile Pro Ser Val Leu Asp  
       65                  70                  75                  80

Glu Gln Lys Val Gln Ser Leu Met Glu Thr Ile Lys Asn Glu Thr Ser  
                   85                  90                  95

Glu Asp Glu Val Pro Pro Ile Asp Leu Leu Trp Ile Ser Gly Ser Glu  
           100                  105                  110

Gly Gly Asp Tyr Tyr Phe Ser Phe Gly Gly Cys His Arg Phe Glu Ala  
           115                  120                  125

Tyr Lys Arg Leu Gln Arg Pro Thr Ile Lys Ala Lys Leu Val Lys Ser  
       130                  135                  140

Thr Leu Gly Asp Leu Tyr His Tyr Met Gly Ser Ser Ala Pro Lys Tyr  
       145                  150                  155                  160

Leu Ala

<210> 7

<211> 125

<212> PRT

<213> *Arabidopsis thaliana*

<400> 7

Met Ala Asn Leu Met Met Arg Leu Pro Ile Ser Leu Arg Ser Phe Ser  
       1                  5                  10                  15

Val Ser Ala Ser Ser Ser Asn Gly Ser Pro Pro Val Ile Gly Gly Ser  
                   20                  25                  30

Ser Gly Gly Val Gly Pro Met Ile Val Glu Leu Pro Leu Glu Lys Ile  
                   35                  40                  45

Arg Arg Pro Leu Met Arg Thr Arg Ser Asn Asp Gln Asn Lys Val Lys  
                   50                  55                  60

Glu Leu Met Asp Ser Ile Arg Gln Ile Gly Leu Gln Val Pro Ile Asp  
                   65                  70                  75                  80

Val Ile Glu Val Asp Gly Thr Tyr Tyr Gly Phe Ser Gly Cys His Arg  
                   85                  90                  95

Tyr Glu Ala His Gln Lys Leu Gly Leu Pro Thr Ile Arg Cys Lys Ile  
                   100                  105                  110

Arg Lys Gly Thr Lys Glu Thr Leu Arg His His Leu Arg  
                   115                  120                  125

<210> 8  
 <211> 86  
 <212> PRT  
 <213> Thermosynechococcus elongatus

<400> 8  
 Met Arg Val Leu Asp Leu Pro Leu Asn Ala Ile Arg Arg Pro Leu Val  
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Arg Gln Thr Asp Pro Ala Lys Val Ala Ala Leu Met Ala Ser Ile Ala  
                   20                  25                  30

Glu Ile Gly Gln Gln Glu Pro Ile Asp Val Leu Glu Val Glu Gly His  
                   35                  40                  45

Tyr Tyr Gly Phe Ser Gly Cys His Arg Tyr Glu Ala Cys Gln Arg Leu  
                   50                  55                  60

Gly Leu Pro Thr Ile Arg Ala Arg Val Arg Arg Ala Pro Arg Ser Val  
                   65                  70                  75                  80

Leu Asn Leu His Leu Ala  
                   85

<210> 9  
 <211> 87  
 <212> PRT  
 <213> Nostoc sp.

<400> 9  
 Met Val Arg Val Gln Glu Ile Pro Leu Asn Gln Ile Arg Arg Pro Leu  
                   1                  5                  10                  15

Pro Arg Gly Asn Asp Pro Tyr Lys Val Gln Ala Leu Met Glu Ser Ile  
                   20                  25                  30

Ala Ala Ile Gly Gln Gln Glu Pro Ile Asp Val Leu Glu Val Asp Gly  
           35                  40                  45

Gln Tyr Tyr Gly Phe Ser Gly Cys His Arg Tyr Glu Ala Cys Gln Arg  
       50                  55                  60

Leu Gly Lys Glu Thr Ile Leu Ala Arg Val Arg Lys Ala Pro Arg Ser  
       65                  70                  75                  80

Val Leu Lys Met His Leu Ala  
                   85

<210> 10  
 <211> 141  
 <212> PRT  
 <213> Oryza sativa

<400> 10  
 Met Ala Ala Ser Gly Phe Leu Leu Arg Cys Pro Ala Ala Pro Ser Ala  
       1                  5                  10                  15

Val Pro Leu Trp Gly Arg Ser Gly Arg Gly Gly Gly Gly Gly Leu Ala  
           20                  25                  30

Phe Ser Ala Ser Ser Ser Asn Gly Ala Ala Val Pro Ser Ser Leu Ser  
       35                  40                  45

Asp Ser Glu Lys Lys Gly Pro Val Val Met Glu Ile Pro Leu Asp Lys  
       50                  55                  60

Ile Arg Arg Pro Leu Met Arg Thr Arg Ala Asn Asp Pro Ala Lys Val  
       65                  70                  75                  80

Gln Glu Leu Met Asp Ser Ile Arg Val Ile Gly Leu Gln Val Pro Ile  
           85                  90                  95

Asp Val Leu Glu Val Asp Gly Val Tyr Tyr Gly Phe Ser Gly Cys His  
       100                  105                  110

Arg Tyr Glu Ala His Gln Arg Leu Gly Leu Pro Thr Ile Arg Cys Lys  
       115                  120                  125

Val Arg Arg Gly Thr Lys Glu Thr Leu Arg Ile Gly Cys  
       130                  135                  140

<210> 11  
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 <213> Artificial Sequence

<220>  
 <223> Description of Artificial Sequence: Synthetic  
       primer

<400> 11  
gtcccgcggc ggcggcgacg

20

<210> 12  
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<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
primer

<400> 12  
agcaggtgcc aaggaggctg

20

<210> 13  
<211> 32  
<212> DNA  
<213> Artificial Sequence

<220>  
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primer

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32

<210> 14  
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<212> DNA  
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primer

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44

<210> 15  
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<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<220>  
<221> MOD\_RES  
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<223> Gly or Ser

<400> 15  
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1 5

<210> 16  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
peptide

<400> 16  
Phe Ser Gly Cys His Arg  
1 5

<210> 17  
<211> 6  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic  
6xHis tag

<400> 17  
His His His His His His  
1 5